IN THE SPECIFICATION

Please replace the paragraph bridging pages 5 and 6 with the following:

A2

In another preferred embodiment, the jumper pads may be formed over a segment of insulating or dielectric material, such as a nonconductive film or coating, that is applied to the active surface of the die. The insulating material protects internal circuitry near the active surface from any interference or shorting that may be otherwise generated by the presence of the jumper pad or connections to the jumper pads.

Please replace the paragraph bridging pages 8 and 9 with the following:

A2

In FIGS. 2A and 2B, a semiconductor device 30 having peripheral bond pads 116 includes a sheet-like insulating layer, film or tape segment 32 disposed between an active surface 114 of die 34 and jumper pads 120. The jumper pads 120 are thus formed in or on the tape 32 and the tape 32 is adhesively attached to the active surface 114 of a die 34. The tape 32 may be an adhesive-type tape or bear a thermosetting adhesive 33, one preferred tape being a polyimide film as sold under the trademark Kapton®, or other suitable tapes, tape-like films or sheet structures adhesively attached to active surface 114 using adhesive techniques known in the art. Preferably, the tape 32 is nonconductive and thus insulates the active surface 114 of the die 34 from electrical signals that may be passed through the jumper pads 120. The thickness of tape 32 has been exaggerated for clarity but may, in fact, be extremely thin, only of sufficient structural integrity to maintain its form during handling and application to the die.

Please replace the paragraph bridging pages 9 and 10 with the following:

A3

FIG. 3 illustrates yet another preferred embodiment of a semiconductor device 40 according to the present invention in which an adapter 46 converts a peripherally bond padded semiconductor die 42 to a device 40 bearing jumper pads 220. The semiconductor die 42 includes bond pads 216 which have been "bumped;" that is, balls or bumps 44 of gold, solder or conductive adhesive have been attached thereto. An adapter 46 configured to mate with the active surface 214 and bond pads 216 of the die 42 is comprised of a support structure 48, which

A3 cont'd

may be formed of a sheet-like structure, such as Kapton® or other tape as used in tape automated bonding, or a more rigid structure formed from ceramic, silicon, FR-4 or other materials known in the art. Preferably, the adapter 46 is formed from a material having a coefficient of thermal expansion (CTE) substantially matching the CTE of the die 42. The adapter 46 includes a plurality of first contact pads 50 on a top surface 52 thereof and a plurality of second contact pads 54 proximate a bottom surface 56 thereof. The first contact pads 50 are electrically connected to the second contact pads 54 by conductive contacts or vias 58 that extend to and between the first and second contact pads 50 and 54, respectively, and are contained within the support structure 48. The second contact pads 54 are arranged to match the arrangement of bumped bond pads 216. Thus, when the adapter 46 and die 42 are brought together and mutually secured by adhesive 57, the second contact pads 54 mate with the bumped pads 216. As further illustrated in FIG. 3A, the assembled semiconductor device 40 may be dipped or coated with a protective layer 59 of, for example, epoxy or silicon gel to protect and insulate the adapter 46 and the die 42, and the first contact pads 50 may be bumped so that the conductive bumps 61 extend above the protective layer 59 for flip-chip connection to a carrier substrate. In such an arrangement, short conductive traces formed on the carrier substrate would extend between jumper pads 220 and first contact pads 50 to be connected, between a series of jumper pads 220, between a contact pad 50 and an external circuit trace, etc. Alternatively, and as more fully described with respect to FIG. 6, rerouting circuitry may be carried within adapter 46 to reroute a bond pad 216 to a new location of a contact pad 50. It is also an option to employ adapter 46 only as an interposer substrate to provide for flip-chip connection of die 42 to a carrier substrate, omitting jumper pads 220 or any sort of bond pad rerouting capability.

Please replace the paragraph bridging pages 10 and 11 with the following:

A4

As illustrated, wire bonds 80, 81, 82, 83 and 84 can be formed: between bond pad 316 and lead finger 66; between adjacent or proximate bond pads 316; between adjacent or proximate jumper pads 320; between bond pad 316 and jumper pad 320; or between jumper pad 320 and lead finger 66. The termination points of wire bonds 80, 81, 82, 83 and 84 can be of ball, wedge,

A4 contd

or other configuration as is known in the art, and formed with a conventional wire bonding machine. Accordingly, a large number of I/O alternative configurations can be achieved for any semiconductor device, depending on the number and layout of jumper pads 320 and configuration of wire bonds.